

The Manitoba Medical Review

Vol. 24

Winnipeg, April, 1944

No. 4

The Hip Limp

Age Incidence of Conditions Causing It*

By A. P. MacKinnon, F.R.C.S. (C), Orthopaedic Surgeon, St. Boniface Hospital

Until quite recently "Hip Disease" as used in Medical literature meant Tuberculosis of the hip. That was misleading, and has been dropped. Nevertheless many physicians think first of Tuberculosis when presented with a patient who has a hip limp, no matter what the age of the patient may be. It is the purpose of this paper to emphasize that while Tuberculosis may begin at any age it is not the commonest cause of a hip limp in any age group, except possibly between the ages of two to five years.

Tuberculosis of bone and joint is becoming relatively uncommon. There may be many reasons for this, but one of them is that the campaign waged against Tuberculosis in general throughout the civilized world, but especially in our own Province and in Saskatchewan is bearing fruit. Some idea of the relative frequency of the various conditions that cause a hip limp may be gained from Table I, taken from our X-Ray index over a period of years.

Table I
Relative Frequency

Some years ago our X-Ray index showed 403 pathological hips distributed as follows:

Age of Onset	Commonest Cause of Hip Limp
1. Infancy	Streptococci infection of hip
2. On beginning to walk	Congenital Dislocation of the hip, Congenital Coxa Vara is another uncommon cause.
3. 2 - 3 years	Tuberculosis (But it may begin at any age.)
4. 5 - 6 or 7 years	Coxa Plana (Legg, Perthe, Calvé, Walderstrom).
5. 10 - 14 years	Slipped epiphysis (Coxa vara of adolescence).
6. 15 - 35 years	Infectious Arthritis—such as G.C., Streptococcus, Pneumococcus, Staphylococcus (Osteomyelitis).
7. 35 - 60 years	Osteoarthritis.
8. 60 - 70 years	Fracture of neck of femur.
9. Over 75 years	Intertrochanteric fracture of femur.

Streptococcal Infection of the Hip Acute Epiphysitis in Infancy

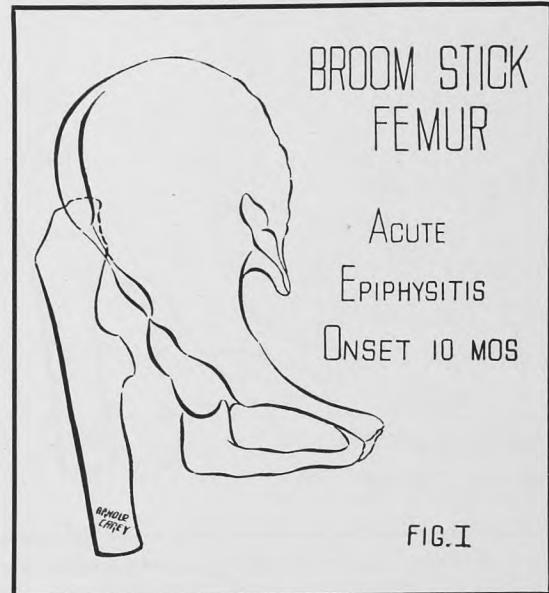


FIG. I

This is not a common condition, but it does occur, and is I believe the commonest cause of a hip limp originating during babyhood. It produces complete loss of the head and neck of the femur. In later life the patient walks like one with unilateral congenital dislocation, and the X-Ray appearance showing

* Read at the Meeting of the Winnipeg Medical Society, January 21, 1944.

a typical "broom stick" femur cannot always be distinguished from that produced by Tuberculosis in early childhood. Tuberculosis however seldom occurs in babyhood. For the diagnosis we depend upon the history.

Congenital Dislocation of the Hip

CONGENITAL DISLOCATION

AGED TWO

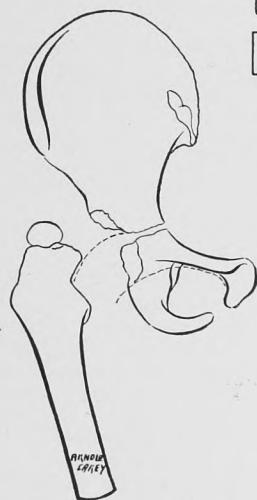


FIG. II

Here there is very little resemblance to Tuberculosis. The only thing suggesting that is the presence of a hip limp. We should not think of Tuberculosis as the cause of a limp that has been present from the time the child began to walk. One can say rather that a hip limp that was noticed when the child first began to walk and continues, is congenital dislocation of the hip until it can be proved otherwise. The X-Ray will always settle the diagnosis.

CONGENITAL DISLOCATION

ADULT

(a) SHENTON'S ARCH

BROKEN.

(b) HEAD MALFORMED BE-
CAUSE FUNCTION HAS
NEVER BEEN
NORMAL.

(c) ACETABULUM SMALL
AND MALFORMED.

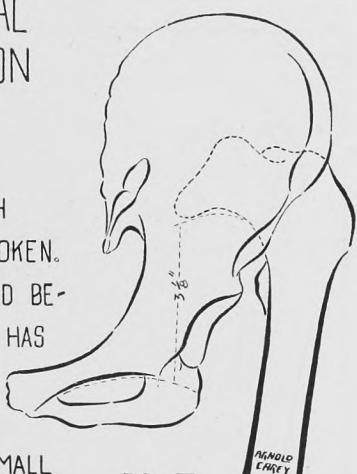


FIG. III

There is one other rare condition, congenital coxa-vara, Fig. IV, which is an uncommon cause of a limp noticed when the child first begins to walk, but the X-Ray appearance of it is characteristic.

Tuberculosis of the Hip

Tuberculosis of the hip may occur at any age. It is not the commonest cause of the hip limp at any

age as far as my observation goes except possibly at the age from two to five years.

CONGENITAL COXA VARA

- (a) HEAD IN ACETABULUM.
- (b) NECK POINTING DOWN-
WARD INSTEAD OF UP-
WARD.
- (c) PSEUDARTHROSIS
OF NECK.

FIG. IV

Coxa Plana—(Legg-Perthe's Disease)

This was described in the same year, namely 1909, by an American, a German, a Frenchman and a Swede. Why it should be called Perthe's Disease here in Winnipeg I do not know. Probably the only explanation is that the Germans had been adept at propaganda, long before Doctor Goebbels. When a child during his first year at school is brought to you with a hip limp you will do well to consider that it is Coxa Plana until it is proved otherwise. That will be settled by an X-Ray picture which shows characteristic changes. These may not show in the first picture if the child is brought early but they will later.

COXA PLANA

HEAD FLATTENED
HEAD MOTTLED



FIG. V

Like Tuberculosis there is a hip limp relatively painless which comes on gradually and gets to be chronic. Examination shows limitation of movement and muscle atrophy much like what we find in Tuberculosis. It is very important that it should not be

confused with the next group, Coxa Vara of Adolescence, because the treatment and prognosis are so different.

Coxa Vara of Adolescence (Slipped Epiphysis)

Perhaps it will have been worthwhile writing this if the reader only remembers that a hip limp coming on in a child at the ages from ten to thirteen or fourteen years is due to a slipped epiphysis until it can be proved otherwise. As in the case of Tuberculosis we have an onset often following a slight or moderate trauma and sometimes without any history of trauma. There is a chronic progressive hip limp with limitation of movement and muscle atrophy. Under such circumstances think first of slipped epiphysis, and you will be right four times out of five. This is a very serious condition and will result in life-long crippling and disability to the patient unless it is treated effectively in the first few weeks or months.

I do not mean to say that Tuberculosis of the hip cannot begin at the age of six years or during the adolescence period. What I do want to emphasize is that a hip limp developing at either of these periods is coxa plana or slipped epiphysis four times out of five, perhaps nine times out of ten.

SLIPPED
EPIPHYSIS



FIG. VI

Infectious Arthritis due to G.C., streptococcus, pneumococcus, or staphylococcus (osteomyelitis). A hip limp originating between the ages of fifteen and thirty-five may be due to Tuberculosis. However, septic infection from the streptococcus, pneumococcus or the gonococcus are commoner causes in this age group. An osteomyelitis beginning in the upper end of the femur or in the acetabulum, due to the staphylococcus, is common enough. In later life these patients may present a picture very like Tuberculosis. The history of onset is the most important consideration in making the diagnosis. Such a patient if he continues to use the hip will eventually develop osteoarthritis.

Osteoarthritis

A chronic disabling condition causing a hip limp with the onset somewhere between thirty-five and sixty years is most often due to osteoarthritis. Any condition of the hip joint that interferes with free movement of the head in the acetabulum and that continues over a period of years, will ultimately lead to an osteoarthritic condition sometime between the

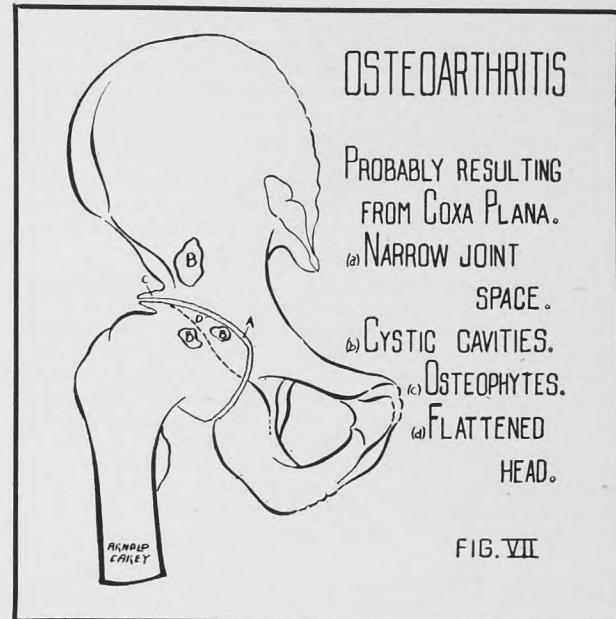


FIG. VII

years thirty-five and fifty or sixty. The common causes are congenital dysplasia of the hip, Fig. VIII, reduced congenital dislocation, untreated or unsuccessfully treated cases of coxa plana or slipped epiphysis and infectious arthritis of the hip joint which has not been sufficient to destroy it and has left some movement.

The question of differentiation between osteoarthritis and Tuberculosis sometimes comes up. In both

CONGENITAL
DYSPLASIA
OF HIP

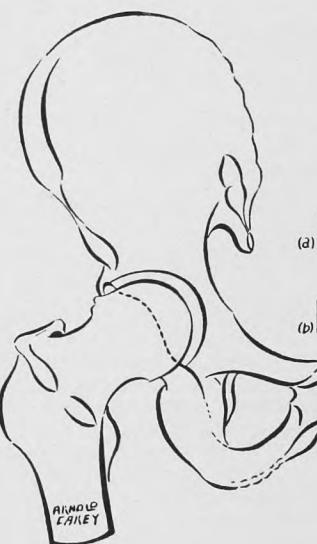


FIG. VIII

conditions we expect narrowing of the joint space and evidence of cavities in the head or in the acetabulum. The writer has encountered real difficulty in diagnosis once or twice in these two conditions. However, the characteristic X-Ray changes nearly always make the diagnosis plain.

Fractures of the Neck of the Femur

Finally to make this article complete one may say that a hip limp originating between the years of sixty to seventy-five years is usually due to fracture of the neck of the femur. On the other hand the older patients from seventy years on very likely have per-

trochanteric fractures. This differentiation is important sometimes because the line of treatment we have today is different. In the present stage of our knowledge the writer believes that fractures of the neck of the femur should be treated by Smith-Peterson nailing or some other method of internal fixation, but intertrochanteric or peritrochanteric fractures are often better treated by other methods. The rule holds that an elderly patient who falls and cannot rise because of disability in the hip, has one of these conditions until it is proved otherwise.

In concluding, the writer feels that he should acknowledge his indebtedness to those who have made it possible for him to write this paper, based upon the examination and treatment of a not inconsiderable number of patients with a hip limp during the past 25 years. It has been his privilege to have worked under two really Great Chiefs, the late Dr. David A. Stewart, and the late Dr. Herbert P. H. Galloway. The majority of his readers know what that means, because they too have sat at the feet of these masters.

My thanks are due also to those who have referred cases. Dr. E. L. Ross, Superintendent of the Sanatorium at Ninette, and Dr. Duncan F. McRae of his staff; Dr. D. L. Scott of the Central Tuberculosis Clinic of Winnipeg; Dr. A. C. Sinclair, Superintendent of the St. Boniface Sanatorium, and Dr. K. C. Johnston of his staff; Dr. R. G. Ferguson, Medical Director of the Antituberculosis League of Saskatchewan; Dr. T. W. Hamilton, the Superintendent of the Sanatorium at Fort Qu'Appelle, and his staff; and finally to the host of prairie practitioners of Manitoba and Saskatchewan, who have trusted to his care many of their difficult cases handicapped by a hip limp.

His thanks are also due in a very special sense to Mr. Arnold B. Carey for the excellent line drawing reproduced on another page. They were done in a bed in the St. Boniface Sanatorium, which he entered over seven years ago because of a hip limp. His hip is now cured, but he is still fighting bravely against the tubercle bacillus. It is only this "Seven Years War" that has so far prevented him from taking his place as a foremost medical artist.

661 Broadway, Winnipeg.

Some Observations in Caudal Anaesthesia in Obstetrics

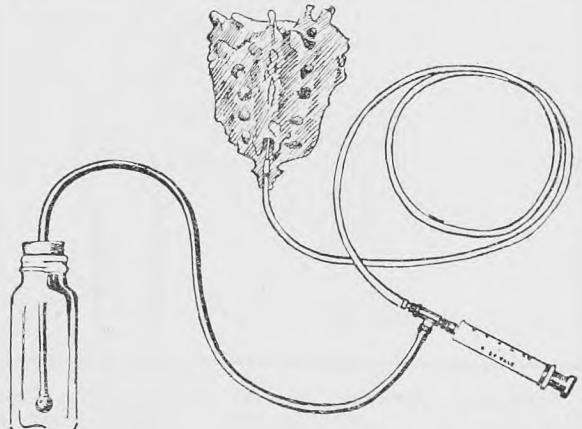
By Marjorie R. Bennett, M.D.

Caudal block was first used as a method of producing regional analgesia in 1901 by Sicard and Cathelin, working independently. Many workers have employed this method in Obstetrical cases, from the time of Laewen and Gaza, who used it in 1911, up to Lehman and Mietus who reported its use in 400 cases in 1942. In the same year, Hingson, Edwards and Southworth originated the technique for continuous caudal analgesia and reported thirty-three cases. Since that time several workers have published their results in small series of cases, and in "The Journal of the American Medical Association" for October 1943 Hingson and Edwards gave an "Analysis of the first 10,000 confinements thus managed with the report of the authors' first 1000 cases". This last report includes the results of fifty-five obstetric clinics in North American medical schools and teaching hospitals where the authors had presented teaching demonstrations of the method.

Continuous caudal analgesia is a regional nerve block induced by injecting a local anaesthetic agent into the extradural space of the sacral canal at repeated intervals. The pain impulses of labor are transmitted through the ganglions of the 11th and 12th thoracic segments, while the motor nerve supply to the upper uterine segment arises from the upper thoracic sympathetic ganglions. Thus peridural nerve block extending high enough to include the 11th thoracic segment will relieve labor pains without interfering with uterine contractions. The nerve supply of the cervix and lower uterine segments is believed to course from the 2nd, 3rd and 4th sacral nerves. Block of these nerves produces definite softening of the cervix, with more rapid effacement of the lower uterine segment and cervical dilatation. Anaesthetic fluid, when injected into the peridural space, will extend up to a level determined by the amount of fluid injected and the rate of injection. The Hingson-Edwards technique is as follows:

The patient is placed in knee-chest position and the sacro-coccygeal area painted with an antiseptic. The sacral hiatus is located and a small amount of local anaesthetic injected subcutaneously in this area. A special three inch malleable stainless steel 19 gauge needle is then introduced by piercing the sacro-coccygeal ligament at an angle of 45 degrees and then depressing the hub of the needle and slowly advancing it in the plane of the sacral canal. In many cases the point of the needle will be felt to strike the anterior bony wall of the sacral canal, and this is a

guide to correct insertion of the needle although trauma should be avoided as much as possible. A short piece of rubber tubing is slipped over the hub of the needle and aspiration is attempted by means of a syringe. With the bevel of the needle properly placed, there should be no return of fluid. If spinal fluid is drawn into the syringe the needle is withdrawn and no further attempt at caudal anaesthesia is made. If blood is withdrawn, the needle is moved until blood is no longer obtained and the injection



proceeded with. The patient now turns on her side. 135 cc. of 1½% metycaine is prepared in a flask, and a sinker attached to a rubber tubing is placed in the solution. This tubing is attached to an automatic valve on a 10 cc. Luer-Lok syringe. Leading from this valve is a four foot length of 1/16 inch rubber tubing with a special adapter. This apparatus is filled with Metycaine and all air excluded. The small bore rubber tubing is then attached to the needle after removing the syringe and rubber used for attempting aspiration. 8 cc. of Metycaine is slowly injected into the sacral canal. After allowing ten minutes to elapse, sensation and movement of the lower limbs are tested. If there is no anaesthesia or paralysis to indicate presence of spinal anaesthesia, a further 22 cc. is injected. Within fifteen minutes anaesthesia will be evident, starting in the perianal region and extending to include the legs and the lower abdomen and back. When loss of pain sense extends halfway to the umbilicus, there will be relief

of labor pains. This is sometimes not achieved until an additional 10 or 20 cc. has been injected. The needle is strapped firmly in place after smearing sulphathiazole ointment around the point where it pierces the skin. Subsequent injections are made at intervals of twenty to fifty minutes, as required, to keep the upper limit of skin anaesthesia just below the umbilicus. Hourly rectal examinations are done and the uterine contractions are timed frequently.

Continuous caudal anaesthesia has been attempted in twenty-one cases at Grace Hospital since May 1943. Seventeen of these were private cases, and four were staff cases, given at the suggestion of Dr. S. Kobrinsky. With such a small series it would be misleading and useless to analyse the results and give percentages of complications etc. However, one cannot help forming certain impressions regarding the usefulness of the procedure and its dangers and difficulties.

The technique of Hingson and Edwards was used in preference to the catheter method or the continuous drip method. Without any personal knowledge of any of these methods, it seemed to me that the catheter offered too much danger of infection, and that the continuous drip did not allow accurate control of dosage. The length of anaesthesia varied from three to thirteen hours. In sixteen cases the results were excellent, the patients being unaware of uterine contractions and the delivery being accomplished without pain. In two cases it was not possible to introduce the needle into the caudal canal. One case had satisfactory anaesthesia maintained for several hours before it was discovered that she had only been suffering from false labor pains. The remaining two cases will be discussed separately. Metycaine 1½% was the drug employed, and amounts varied from 70 - 400 cc.

Case 1V in my series was classed as unsatisfactory because the needle had to be removed after six hours of analgesia. It had become blocked with blood and at that time there was no spare needle in the hospital to replace it. Case XI was also unsatisfactory. The needle slipped out of the caudal canal twice, so that this patient had alternating periods of pain and relief. On the whole, however, she considered the anaesthesia satisfactory, the return of the pains only serving to accentuate the feeling of relief when she again became pain free. This difficulty was caused by the fact that we had used 2½ inch needles in her case and as she was moderately obese, the movement of turning in bed kinked the needle sufficiently to displace the tip even though the whole of the needle remained under the skin.

Other complications have likewise been of a minor nature. Two patients complained of dizziness of short duration. In one, the dizziness lasted one hour, and in the other, dizziness followed two of the injections and lasted only five or ten minutes each time. In one case the needle broke. This was the only case in which a 20 gauge needle was used. The broken needle was easily removed by making a small incision.

No major complications occurred. So far there has been no case where the subarachnoid space has been entered. I feel that the preliminary injection of 8 cc. with an interval of ten minutes before any further injection is very important. The resistance encountered when injecting the solution is greater than that in spinal injections. This is a test which has not been mentioned in any of the articles which I have read and is comparable to the rate of the flow test used by Block and Rotstein.

On three occasions veins have been pierced and blood dripped out of the needle when it was inserted. The position of the needle was changed until no blood could be drawn back by syringe, and the injection proceeded with. Vomiting occurs occasionally but not to a troublesome degree. I have not been as successful as the writers of popular magazine articles

in getting my patients to eat a full meal during labor. They will express their readiness to take a meal, and then refuse it when it is set before them, or eat it and then promptly bring it up again. However, they do take fluids well, and are able to take food as soon as labor is completed. Vomiting sometimes occurs when dilatation is complete and the head descends to the perineum. Low back pain, post partum, is not more common than with other types of anaesthetic and is relieved by codeine.

The initial injection is made when labor is definitely established. In my experience there has been a great variation in the dosage required. In one patient the first 30 cc. will produce analgesia reaching above the umbilicus, and in another, several subsequent injections at fifteen minute intervals will be required before analgesia reaches the umbilicus and pains are relieved. It seems impossible to predict the dose from consideration of the size and type of patient. Once this stage is reached it is a common experience for the patient to request that we telephone her husband and tell him that she has no pain. About the same time she becomes very concerned about the misery of her fellow patients. She then settles down to read or talk, and if the labor is long she usually sleeps for several hours. All changes of position are carefully supervised but are easily accomplished, and the patient is permitted to lie in any comfortable position. It may not be possible for her to void spontaneously, so the height of the bladder must be watched and catheterization resorted to if necessary.

Two of my patients complained throughout the greater part of the anaesthetic. One was the patient who had the needle removed after six hours of caudal anaesthesia due to blocking of the needle. She kept slapping her thighs and saying that her legs were numb. When it became apparent that the anaesthetic would have to be discontinued, she was immediately given a sedative, but in one half hour she presented the picture of the woman in labor, so well known to us all, red-faced, tossing about, and begging us to "do something" for her. The other case was a young woman in her first labor, which lasted 25 hours, who became very weary. Unfortunately there were no other patients in labor at the time and I had to assure her that labor pains were much more disturbing than the tiredness which she was experiencing. She accepted my word for it, and stopped her moaning, but I am sure the most convincing argument would be to let the analgesia wear off for the space of several labor pains and then let the patient choose for herself.

The progress of the labor must be checked frequently by timing the uterine contractions and by rectal examinations. Dilatation of the cervix seems to be very definitely hastened. The perineum is well relaxed, so that it is easy for the patient to deliver the head spontaneously when asked to bear down with contractions. Patients co-operate in the second stage very well, chiefly because of the absence of pain and partly because they are fully conscious. Operative deliveries were not routine and were employed for definite obstetrical indications.

Posterior positions occurred in three cases. This is rather a high incidence but may be due to the small number of cases. Babies cry spontaneously as they are being delivered and are a good color by the time aspiration of mucus is completed. This must be attended to very promptly on account of the quick response of the baby. Bleeding in the third stage is slight or absent.

Caudal anaesthesia is contra-indicated in disproportions between the size of the foetus and the birth canal, placenta praevia, gross deformities of the spine, local infection near the sacral hiatus, and history of sensitivity to local anaesthetic agents.

In the recent report of 10,000 cases by Hingson and Edwards there was one death from infection. They conclude that the incidence of operative obstetrics is increased, that posterior positions are increased, that transverse arrest in mid pelvis is slightly increased, but that these difficulties are to some extent offset by increased relaxation of the cervix, lower uterine segment and perineum, permitting manipulations and operative procedures to be carried out with ease.

Caudal anaesthesia is a relatively safe form of regional anaesthesia which offers dramatic relief of

pain in labor and delivery. It is obvious that it will be invaluable in cases of cardiac and pulmonary disease, and several cases have been reported where there has been a therapeutic effect in eclampsia. As far as the foetus is concerned, there is no immediate or remote hazard which can be attributed to the anaesthetic. The one real objection to the use of this very valuable anaesthetic is the fact that it is so time consuming. In order to have it come into general use it would be necessary to have internes trained in its use and conduct, under the supervision of an anaesthetist who would be available at all times.

The Diagnosis and Treatment of Climacteric

By M. Sydney Margolese, B.Sc., M.D.

The term climacteric in the title of this article has been deliberately chosen in the belief that the diagnosis of climacteric would be more frequently made if it were differentiated from the term menopause.

Menopause and climacteric are not synonymous. They are both phenomena resulting from the process of gonadal involution. Prior to the involutionary process, the pituitary, through its gonadotropic hormones, stimulates the ovary to produce the ovarian hormones. These hormones in turn limit the amount of gonadotropic hormone produced; a pituitary-ovarian balance is attained (Fig. 1). Gonadal involution begins when the ovary no longer responds to pituitary stimulation (Fig. 2). As the ovarian hormone level diminishes, this check on the pituitary is removed and the level of the pituitary hormones increases (Fig. 3). This overcompensation of the pituitary in its attempt to maintain a balance, is not a selective one. It is shared by other tropic factors as thyrotropic and adrenotropic, and these latter may cause overactivity of their respective glands (Fig. 4). The amount of overcompensation depends upon the rate at which the ovarian hormone diminishes. If it occurs slowly, then there is time for adjustment, and a new balance is attained. If it occurs rapidly, the endocrine system is in a state of imbalance and this effects a secondary disturbance in the equilibrium between the two divisions of the autonomic nervous system. This disturbance constitutes the climacteric.

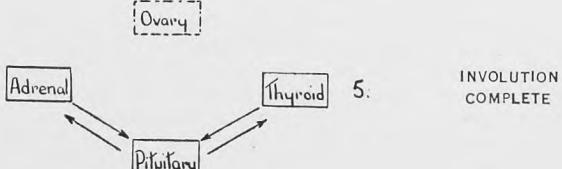
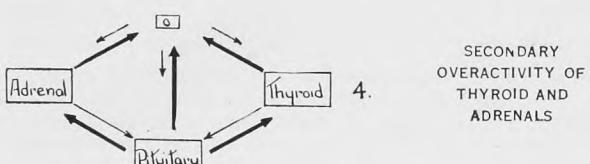
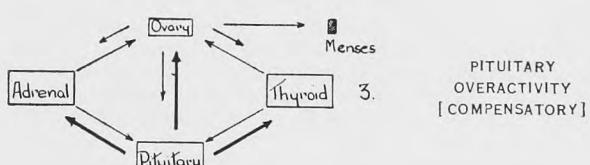
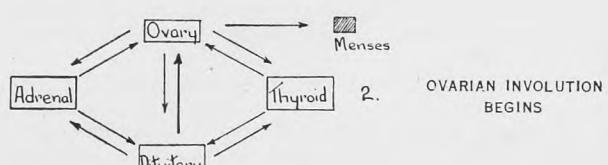
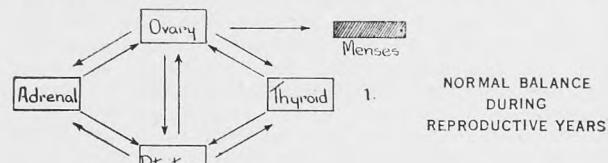
Menstruation, on the other hand, is dependent only upon the maintenance of certain absolute ovarian levels. When, during the period of gonadal involution, this level falls below a certain value then menstruation ceases. Thus there is no relationship between the climacteric and menopause except that they both occur as a result of gonadal involution. If there is a rapid drop in the ovarian hormones to a value still above the threshold which will cause bleeding, then climacteric symptoms will appear before the menopause. If the ovarian hormones decrease suddenly after their value is lower than that necessary for bleeding, then climacteric symptoms will occur after the menopause. If the ovarian hormones decrease gradually during the period of involution, the climacteric will not occur.

Diagnosis

The diagnosis of the climacteric is based upon a recognition of the symptom complex and is verified by vaginal smear examination.

The symptoms of the climacteric may be grouped as nervous, circulatory, and menstrual (1). The nervous symptoms in order of their frequency are nervousness, excitability, irritability, headaches, occipito-cervical pain, decreased memory and concentration, depression and crying, psychosis, formication, and insomnia. The circulatory symptoms in order of frequency are hot flushes, palpitation, vertigo, cold hands and feet, and numbness. The menstrual disturbances in similar order are irregularity, hypo-

menorrhea, oligomenorrhea, menorrhagia, metrorrhagia, dysmenorrhea, and amenorrhea. The average age at onset of symptoms is forty years, although the



average age at time of consultation is forty-three years.

Various combinations of these symptoms should make one suspect the climacteric and confirmation may be obtained by examination of the vaginal smear. The vaginal smear is a most useful device. In addition to its diagnostic value, it serves as a guide to dosage, and determines the efficacy of treatment. A further field of utility has recently been suggested by Papanicolaou and Traut (2) in that vaginal smears usually reveal the presence of cancer cells if there is malignancy in any part of the genital tract. This information is not only extremely valuable in itself, but contraindicates the use of estrogenic therapy.

Treatment

For the sake of brevity, only specific therapy will be considered. It has been well established that the sex hormones are specific therapy for the climacteric. The climacteric has been shown to result from the rapid drop in ovarian hormone level; the object of treatment is to reduce the rapid rate of change. The artificial addition of sex hormones may therefore be utilized to restore the normal pituitary inhibition. The slow withdrawal of treatment enables the endocrine system to adjust gradually to the new status, and the secondary disturbances which are symptomatic of the climacteric do not occur.

The sex hormones that are used are the estrogenic hormones of the female and the male androgenic hormone. The latter will be considered in the discussion of the complications. The estrogenic hormone has been introduced to the profession by the various pharmaceutical houses in a variety of forms, and under such diverse trade names that difficulty may be presented in the choice of preparation. The estrogenic preparations available today may be divided into three groups; there are the compounds which occur naturally in the ovaries, an example of which is estradiol. Secondly, there are the degradation products, examples of which are theelin, theelol, and estrone sulphate. Thirdly, there is a lengthy series of compounds which do not occur naturally in the body but which have an estrogen-like effect. Examples of this group are diethylstilbestrol and hexestrol.

The choice of estrogen for therapy is relatively simple. Diethylstilbestrol, because of its potency and low cost, is the estrogen of choice, where it can be tolerated. It can be given either parenterally or orally, and by the latter route it is by far the most efficient of the three groups. The daily oral dosage of diethylstilbestrol for the average case ranges from 0.25 mg. to 1.0 mg. although very occasionally larger doses may be required. Dosage should be increased fairly rapidly until symptoms are under control and should then be dropped to a level just sufficient for maintenance. This will avoid many of the complications. Parenterally, the dosage is 1 to 5 mg. one to three times weekly. Parenteral medication is advisable only for rapid control of symptoms and oral treatment should be instituted as soon as possible. When this preparation is not tolerated, symptoms will occur whether it be given orally or parenterally. In some cases starting with smaller doses, giving it after meals, or the addition of phenobarbital, may eliminate the side effects. In other cases where one synthetic preparation is not tolerated another may be. If diethylstilbestrol causes nausea, hexestrol may be tolerated, and vice versa.

Where the synthetic preparation cannot be tolerated, then estradiol benzoate, or dipropionate should be given, because its potency and duration of action is greater than theelin. The dosage and frequency of administration of estradiol depends upon the ester which is used. The dipropionate is the one of choice because of its much longer action, necessitating less frequent injections (3). It is advisable to start with moderately high dosage, such as 1 mg. twice weekly,

decreasing this as soon as symptoms are controlled to 0.5 or 0.2 mg. at intervals of 5 to 15 days. The oral preparation, estradiol, while more potent than theelol, is much less potent than diethylstilbestrol, and this factor combined with its cost, mitigates against its usefulness. The dosage is 0.1 to 0.5 mg. 1 to 3 times daily depending upon the severity of symptoms.

Another method of treatment is the implantation of estrogen pellets. The results have been very good, but the method is as yet too uncertain for general use. The disadvantages are, difficulty in the removal of the pellet if the initial dosage is too high, failure of pellet absorption and infection.

Complications

The commonest complication, intolerance to the synthetic preparation, has already been mentioned. The symptoms are nausea, vomiting, and skin rashes. Suggestions for its control have already been discussed. The original idea of the toxicity of diethylstilbestrol, has now been shown to be due merely to its potency. For when any of the natural estrogens are given in equivalent dosages, the same degree of liver damage is produced (4).

When any estrogen is given over a period of time, excessive bleeding may result. Smith (5) states that such bleeding has caused a marked increase in diagnostic curettage to rule out the possibility of malignant changes. It has been suggested (6) that dosage be maintained at a level that will not cause bleeding, but this often results in inadequate therapy. Geist & Salmon (7) recommend androgen therapy for those still menstruating or having meno-metrorrhagia, but Hamblen (8) feels that the danger of masculinization does not warrant its use. His views deserve consideration, for even small doses may at times cause masculinizing symptoms which are distressing to the patient. However, a modification suggested by Geist & Salmon for post-menopausal estrogen bleeding, the combination of androgen and estrogen, seems very logical, and is very effective.

It may be worth while to maintain an adequate intake of Vitamin B Complex during estrogen treatment. Biskind & Biskind (9) have shown that the inactivation of estrogen in the liver is maintained by the Vitamin B Complex. Ashworth and Sutton (10) found that patients with sub-clinical Vitamin B deficiency acquired the lesions characteristic of these deficiencies when given estrogen.

Summary

1. The endocrine changes occurring during gonadal involutions are discussed with respect to the differentiation between menopause and climacteric.
2. The diagnosis of the climacteric is considered by discussion of its symptomatology and the use of the vaginal smear.
3. Therapy is discussed as to rationale, choice of preparation, dosage and mode of administration.
4. The complications of therapy are discussed with suggestions for their elimination.

References

- (1) Werner: Endocrinology, Lea & Febiger, Philadelphia, 1937.
- (2) Papanicolaou, G.N., & Traut, H.F.: Diagnosis of uterine cancer by the vaginal smear, The Commonwealth Fund, New York, 1943.
- (3) Cantor, M.M. et al: Sex hormones in obstetrics and gynecology, Canad. M. Ass. J. 1942, 47: 12.
- (4) MacBryde, C.M. et al: Hepatic changes produced by estrone, estradiol, and diethylstilbestrol, J.A.M.A. 1942, 118: 1278.
- (5) Smith, G.V.S.: The present status of hormone therapy in gynecology, Med. Clin. N. America, 1943, 27: 1373.

- (6) Severinghaus, E.L.: The year Book of Neurology, Psychiatry, & Endocrinology, 1942, 624.
- (7) Geist, S.H., & Salmon, U.J.: Androgen therapy in gynecology, J.A.M.A. 1941, 117: 2207.
- (8) Hamblen, E.C.: Androgen therapy in women, J. Clin. Endocrinol., 1942, 2: 575.

(9) Biskind, M.S., & Biskind, G.R.: Effect of Vitamin B Complex deficiency on inactivation of estrone in the liver, Endocrinology, 1942, 31: 109.

(10) Ashworth, J., & Sutton, D.C.: Effect of estrogen on the utilization of the vitamin B Complex, Arch. Int. Med., 1942, 69: 15.

Case Report

A French-Canadian woman of 39 was admitted to Hospital because her legs and arms had been getting increasingly useless for several weeks. She was obviously uncomfortable and unable to move herself. Her complexion was very dark. There were no complaints relating to head and neck or any signs other than gingivitis and a red tongue. Her chest and abdomen were unevenly pigmented but she had neither symptoms nor signs relating to their viscera. At the beginning of her illness she had fairly severe vomiting and diarrhea which lasted for several days. Her appetite was still very poor. There were no urinary complaints.

Her arms were limp by her sides. The hands were somewhat puffy. Movements were good at the shoulders and fair at the elbows but the hands were completely powerless. Reflex response was diminished and sensation was greatly disturbed in the hands and beyond them for some distance up the arms. Both sides were symmetrically involved. Touch was diminished in this area but firm pressure was very painful and so was pressure on the muscles. The skin upon the palms was greatly thickened.

The legs were extended and quite flaccid. The feet were puffy and the skin shiny. The hip movements were good. At the knees there was some limitation: the feet were dropped and at the ankles there was no movement at all. The deep reflexes were absent. Plantar stimulation caused great pain. The feet and legs for about half their length were hyperaesthetic to pressure and pain. The muscles were very tender and toneless. The soles were thickened.

Simultaneous loss of power wasting and disturbance of sensation indicated lesion of mixed nerves. The peripheral distribution and symmetry suggested the widespread involvement of peripheral neuritis. Laboratory investigation showed severe anaemia to be present (reds 2,600,000, white 7,000, Hb. 52%, C.1. 1.0, smear, miciocytes and macrocytes). The urine was normal.

The cause of the neuritis remained to be determined. The causes of peripheral neuritis are legion but essentially in each case there are two factors: a predisposing one — avitaminosis B, and an exciting one. The latter are very numerous but the common causes are these: of the chemicals, alcohol, arsenic and lead; of the bacterial toxins, diphtheria especially but also influenza; of metabolic disorders diabetes. In addition there is an important virus group which at times occurs in epidemic form, may involve the face, and has other distinguishing features.

In this case none of the common exciting causes seemed likely except one of the chemicals and lead was easily eliminated because it does not cause sensory changes. Alcoholism was excluded by the history and also by the prominence of pain, the hyperkeratosis of the palms and soles and by the pigmentation which was very dark despite her anaemia. All evidence thus pointed to arsenic.

We next enquired into the source of the arsenic and found that she had been working in the potato fields when she took sick. This explained the severe gastro-intestinal symptoms with which the illness began. We could have examined the excreta for arsenic but very often persons discharging considerable amounts have no clinical symptoms and vice versa. Here the picture was in all ways so typical that there was no room for question. The chief remedy for arsenical poisoning is sodium thiosulphate but the condition here was not one of acute poisoning and our task was to repair damaged nerves. She was given large amounts of the antineuritic vitamine. Thiamine in 5 mg. doses was given four times a day to maintain a high concentration and in addition B complex was given intramuscularly every day for several weeks. Much of this was perhaps wasted but we felt that saturation was desirable. The muscles were kept at rest and plaster boots used to overcome the footdrop. As she improved massage and passive movements were commenced.

It is now seven months since treatment was begun and nearly nine months since the poisoning occurred. The hands are quite useful. The skin changes have disappeared and sensation is almost normal. She can use her legs a little but she cannot walk far or freely. The year will be up before she is quite well.

Recovery from arsenical neuritis is slow. A cut nerve will grow at the rate of an inch a month. There the nerve merely grows along a fairly clear path. Here the nerve is destroyed. The myelin sheath under the action of the chemical was converted into droplets, the axis cylinder became fragmented and granular, the neurilemma also was destroyed. The growing nerve must therefore thread its way through a jungle of disintegration. Moreover degenerative changes occur in the muscles themselves.

Arsenic is a common poison found in many homes, both town and country. Tolerance varies widely. The effects produced may be slight or profound. In the former, the true nature of the illness may not be suspected. In the latter, very early treatment may succeed in shortening what usually proves to be a long incapacitation.

J.C.H.

Hospital Luncheon Program Reports

Grace Hospital

Ectopia Cordis—Dr. J. P. George

Dr. George presented a case of Ectopia Cordis in which the heart was completely exposed. The child had also cleft palate and hare lip. Moving pictures in color were shown. The case was discussed by Drs. Chown and Allison and by Professor Thompson, who spoke on the anatomical and embryological reasons for the anomaly.

J.C.H.

St. Boniface Hospital

Developmental Abnormalities and a Case of

Exomphalus—Dr. S. S. Peikoff

March 2nd.

By means of a simple but most ingenious device Dr. Peikoff demonstrated the mechanism responsible for developmental anomalies which lead to surgical disorders. He then showed a child upon whom he had operated three years ago for exomphalus (physiological umbilical hernia). This condition occurs about once in 6,000 births and the mortality is heavy. Without operation none survive. When operated upon after 24 hours 2 out of 3 die and even when operation is done within 12 hours only 3 out of 4 survive. In this case the child was operated upon 8 hours after birth. A transparent sac, the size of a large grapefruit, contained the liver and intestines. Dr. Peikoff described the operative procedure and then showed recent x-rays which showed all viscera in normal position except for the duodenum. The child looked quite healthy.

Palliative Gastrostomy for Carcinoma of the Cardiac

Dr. S. S. Peikoff

Carcinoma of the oesophagus leads to dehydration and death by starvation when left alone. Gastrostomy will not only prolong life but will make it more tolerable. It should, however, be done early. Dr. Peikoff showed a patient with cancer of the cardiac end of the stomach who had had symptoms for four months and upon whom he had performed gastrostomy two months before. He described the various types of operation and explained the advantages of the Janeway technique which was the one he used. The patient feeds himself through a catheter and meats, vegetables, puddings, etc., are forced into the stomach by a grease-gun.

Myelogenous Leukaemia—Dr. D. S. McEwen

February 24th.

Dr. McEwen discussed the nature and clinical picture of Myelogenous Leukaemia. He spoke of the insidious onset, the comparative effect of x-rays upon the bones and spleen, and said that repeated blood counts were necessary for proper following of a case. These counts, he urged, should be done at the request of the physician and not left to the radiologist.

Diabetic Retinitis—Dr. A. Hollenberg

February 24th.

Dr. Hollenberg spoke upon the work he was doing in diabetic retinitis. The further evidence he had gathered substantiated that upon which he had based his paper published in the Review last December.

J.C.H.

St. Joseph's Hospital

Pelvic Abscess—Dr. R. Danzinger

Feb. 22nd.

A girl age 21 seen Dec. 19, 1943 complaining of chills and vaginal bleeding for 3 days. Temperature 102.2. Two days later she passed a fetus 4½ inches long. Blood examinations Hgb. 84% R.B.C. 4,190,000. On Dec. 29th patient was discharged from the hospital.

On January 3, 1944 patient was re-admitted complaining of pain in the left lower quadrant. Temperature 104.3, pulse 124, Hgb. 73% R.B.C. 3,500,000, sedimentation rate 85%. On examination a mass was felt in the left lower quadrant extending up to the level of the anterior superior spine. The mass was increasing in size until it reached the level of the umbilicus. A diagnosis of parametric cellulitis was made.

Treatment: Hot fomentations, radiant heat, sulfathiazole and iron given orally. The mass decreased in size gradually. On Feb. 10th the mass could be felt about 2 inches above the pubis. Sedimentation rate was 62% from then on the mass remained stationary. On Feb. 20th the mass was quite mobile by bimanual examination. Sedimentation rate was 42%. A diagnosis of tubo-ovarian abscess was made and was drained transperitoneally, through left low mid rectus incision. On March 3rd, 1944, sedimentation rate was 24% Hgb. 92% R.B.C. 4,900,000 and there was no mass palpable suprapubically.

Paraplegia—Dr. B. A. Victor

A woman age 44 was admitted to the hospital on January 31. The following history was obtained. The patient fell down the stairs and suffered an injury to the back and head.

Past History: Thyroidectomy 8 years ago. Operation on the urinary bladder 2 years ago, reason indefinite.

On examination there was paralysis of both legs with diminished sensation and unable to void, retention catheter inserted. Spinal puncture was done. Initial pressure 110 mm of water, final 84% mm of water. Dr. O. Waugh was called in consultation on Feb. 1, his findings were as follows: paresis both forearms and hands, paraplegia of both legs, sensory level hard to establish but sensation seems impaired below costal margin to some extent in both hands. Tender on manipulation in upper dorsal spine. Evidence suggests vertebral injury or scattered cord hemorrhages. X-ray examination of the low cervical and dorsal spine was negative for fracture. There are dense hypertrophic spurs on the anterior margins of the 6th and 7th cervical.

On Feb. 11th re-examination by Dr. O. Waugh revealed the following: patient much improved, movement is returning to the forearms. She has diminished sensation back of each hand distal to wrists. Good sensation for palms, can move left fingers some, right less. Reflexes upper and lower extremities. Unsustained clonus both ankles. Sensation diminished below a level 2 inches below umbilicus (11th dorsal level). Sensation present in both lower extremities including feet but much diminished. The patient is progressively improving. Paralysis of rectum and bladder still present.

A.L.S.

Winnipeg General Hospital

Curare in Anaesthesia—Dr. Donald A. Huggins

The old arrowhead poison of the South American natives has now been purified, the cardiac and res-

piratory depressant factors having been removed, and the muscle paralyzing effect remains. Curare acts on the myoneural junction, preventing the muscle from receiving its normal neuromuscular stimulation.

The drug is injected intravenously, during cyclopropane anaesthesia, just before the peritoneum is opened, and muscular relaxation similar to that obtained with spinal anaesthesia results. 3 to 5 cc. of Intocostrin, the trade name of the Squibb purified extract of curare, is the normal adult dose. The dose is injected within a minute, and relaxation occurs in 1-2 minutes and lasts up to 45 minutes. In reviewing the literature, Griffiths and Johnson, of Montreal, and Cullen, of Iowa, report their experience with the drug and do not advise its use with ether, as serious respiratory depression has occurred with this combination. Prostigmine and artificial respiration with oxygen under pressure are antidotes.

Curare is widely used as an anti-convulsant in metrazol and electro-shock therapy of psychiatric disorders; and also in tetanus and in various states of spastic and muscular rigidity.

Its use in anaesthesia is still in the experimental stage, but it offers great muscular relaxation with cyclopropane anaesthesia, rapidly and when needed at critical points in certain operations.

There was a most full and animated discussion following this paper.

Demerol—Dr. Donald Huggins

A new synthetic drug, which has properties similar to morphine and atropine. The action of the drug is threefold:

(1) sedative reaction.

(2) analgesic reaction, which is midway between morphine and codeine.

and (3) a spasmolytic or relaxing action.

It may be administered either parentally or orally. The drug is generally well tolerated and is non-toxic in therapeutic doses. Dizziness is one of the commoner side effects of the drug, nausea and vomiting being less frequent than with morphine. There is flushing of the face, sweating and dryness of the mouth; euphoria may occur, and in contrast to morphine, respiratory depression occurs very rarely. It is still in the experimental stage, and its use is being investigated in many conditions.

Demerol is a good pre-anaesthetic medication, and also post-operatively. It has been found to relieve the pain of angina pectoris and pleuritic pains. One of its most dramatic effects is its clinical efficacy in the treatment of biliary and renal colic, where it inhibits the contractions and diminishes the tonus of the ureter. Its use in obstetrics has proved to be satisfactory, as it has no respiratory depressant effect on the baby and combines well with seconal or scopolamine which produce amnesia. It is a habit forming drug.

Von Gierke's Disease, or Glycogen Storage Disease Dr. Norman Corne

J. a female child was born on November 20, 1941.

Physical Examination (March, 1944)

Head and Neck—Negative.

Chest—Negative.

Abdomen: Large, protuberant abdomen.

Marked hepatomegaly 1 hand's breadth below rib margin.

Distended superficial veins.

Muscles—Very flabby.

Haemoglobin, 68%; R.B.C., 4.02 million; Color Index, .85.

Fasting blood sugar—.04 mgm. per 100 cc. No signs of hypoglycemia.

Both kidneys are excreting; no demonstrable pathology.

Von Gierke's Disease is an inborn error of metabolism resulting in abnormal deposition of glycogen in the tissues, especially in the liver, which becomes enormous. The fasting sugar is low and sugar tolerance test shows no rise. It occurs in children and is congenital and familial.

This child has hepatomegaly unaccompanied by splenomegaly. There is no jaundice. There is hypoglycemia without the usual symptoms. Acetone and diacetic acid are in the urine with no glycosuria. The cause of this ketosis is fundamentally the same as in diabetes, although produced in a different way. In diabetes, the sugar is present in abundance in the blood but is unable to be used in the combustion of fats. In this disease the fats are not properly burnt because the sugar is held in the liver in the form of glycogen. The prognosis is poor. D.C.A.

Victoria Hospital

February 25th.

"Pain In Right Upper Quadrant"—Presentation of Cases and Films

Dr. J. L. Wiseman.

Differential diagnosis,

Acute cholecystitis with or without stones may often be confused with lesions of the right kidney. In rare cases a double lesion is present, i.e. stones both in the kidney and gall bladder. Lateral pyelograms are very helpful in differentiating the position of a shadow in the right upper quadrant. If the shadow is immediately anterior or overlying the lumbar vertebrae, it is obviously lying in the renal gutter; whereas if it lies closer to the anterior abdominal wall it is in the gall bladder area.

Nephroptosis or prolapse of the kidney is fairly common particularly in the tall, flat-backed asthenic individual but it is frequently associated with a general visceroptosis. To determine the presence of renal ptosis, pyelograms must be made both in the recumbent and upright positions in order to ascertain the extent of renal excursion. Prolapse of the liver seldom occurs. Metastatic growth in the liver secondary to carcinoma of the gall bladder, tumor of the pancreas, malignancy of the right kidney, all these have to be considered in the differential diagnosis.

It is important to remember that of the supposedly renal colics, only 50-60% are due to renal or ureteral calculi and of this number about 10% are of the non opaque variety namely cystine, xanthine, and pure uric acid calculi which fail to visualize. Of the remaining 40% of renal colics the underlying pathology in the urinary tract is due to hydronephrosis whether congenital or acquired ureteral strictures, pyelonephritis, nephroptosis and the passage of ureteral clots from a renal tumor or tuberculosis. It is of the utmost importance when a K.U.B. plate fails to reveal evidence of shadows suggestive of calculi in the urinary tract and in particular in the presence of abnormal constituents in the urine to undertake a searching urologic study.

Dr. L. Wiseman presented several cases with pain in the right upper quadrant with and without urinary disturbances in which the value of thorough urological study has aided materially in differential diagnosis.

A.L.S.



Tell a cardiac patient to find out what he can do and do it; tell him to find out what he cannot do and never do it.—Clifford Allbutt.

Winnipeg Medical Society—Notice Board

C. M. STRONG—President
P. H. McNULTY—Vice-Pres.

Next Meeting April 21st

W. F. TISDALE—Secretary
H. M. EDMISON—Treasurer

Just because you have not been hearing about it lately do not come to the conclusion that there is no longer an Overseas Fund. The fact is that we are having difficulty in getting addresses. Dave Swartz tells us that we must not ask for the whereabouts of any man and when we send parcels to previous addresses we sometimes get a notice that it has been given to someone else. (So far we have never been given the name, or received the thanks, of the unknown recipient.) Now we have addresses of only 28 of our original 80 names. To each of these is going an Easter present.

For the past two months we have mailed to everyone on our list a copy of a special edition of the Review. With each goes a letter giving news not printed and also a hint that we would like an address to which a parcel might safely be sent. In that way we hope to do two things, first to keep our overseas friends well informed of what is afoot in Winnipeg and, second, to keep our lists up-to-date. The special edition, I may say, is printed on lighter paper and is minus the advertisements. In time we'll hear how it is received.

★ ★ ★

Two important matters were brought up before the Executive Committee at the March meeting. Both of these, it was felt, should be mentioned in the Review so that they might be given publicity. The first dealt with addresses upon medical subjects, given by doctors before lay audiences. The Code of Ethics of the C.M.A. requires that every such speaker obtain first of all the authorization of his or her local society. Those who are not members of any society must, nevertheless, obtain permission from one or from the Association because the Code applies to everyone in practice.

The second matter concerned the attendance of out-of-town doctors at our meetings. We wish to make it clear that every visiting doctor is welcome. One purpose of our Calendar is to let out-of-town doctors know when and where our functions are held. Whether in or out of uniform every visitor is more than welcome to all that we can give him.

★ ★ ★

By the same mail came to me two letters. One bore the date of December 19th and came from India. The other was written on the 13th of March and came from Sicily, or, perhaps, Italy. Quite a difference in times of transit—three months against 10 days. The Indian letter came from Major J. Matas. He thanks us for our parcels and has suggestions as to the contents of others.

The second letter was from Lt.-Col. C. H. A. Walton. He had received the Special Edition mentioned above. "We feel the need of such news and the interest of our old friends more than ever," writes Col. Walton. "We still have a large nucleus of Manitoba people on our staff and we would like to think that our friends at home realize that Manitoba was one of the two original hospitals overseas and that it has attempted with some success to maintain the good reputation of the province. For example, we were the first Allied hospital to enter Europe in that we landed in Sicily early in July last. We will be much older and in some ways more experienced when we return and we fully realize there will be many changes. Perhaps, at times, we worry a little about our own futures. The prospects of starting from

scratch again, and as veritable strangers, is a little fearsome to say the least."

Walton is in Sicily. Evoy and Corrigan are in Italy. Others are scattered abroad upon the seven seas and on nearly every front. Some of them have been exiles for nearly five years. To them a breath of the cold, keen air of the prairies would be sweeter than all the honey of Hyblon. They would swap with eagerness the finest remains of the glory that was Greece or of the grandeur that was Rome for a ruined farm house in Manitoba. They have travelled far and endured much. By comparison our own annoyances are petty and who among us has made any sacrifice? The least we can do is to make time to write them. The parcels we send have only the slightest personal touch. They want news, so let them have their wish.

★ ★ ★

The March meeting belonged to the radiologists. Dr. H. M. Edmison told about his experiences with the No. 5 Canadian General Hospital. I have asked him to put it in writing for publication. Capt. F. G. Stuart, whom we heard a few months ago, played a return engagement. This time he analyzed 17,000 chest films as to the nature and frequency of abnormal conditions. Dr. Macpherson dealt with Lipiodol Myelograms. These are of great importance since prolapsed disc has become a frequent diagnosis. The chief point in this paper was the safety with which such myelograms can now be done.

★ ★ ★

Last month we discussed beer in a strictly scientific manner. Now I shall relate a story in which beer plays a minor part in what is really a psychological problem. The pet dog of an apartment dweller died and its mistress, having no other means of disposing of the body, decided to inter it in the garden of a suburban friend. The only thing she could find to serve as a casket was a beer carton, into which she placed the body. She took the streetcar for her friend's house and on it was a soldier who disembarked with her and followed her until they came to a thinly built part of the road. There he approached her and offered to carry her parcel. The lady was, by this time, tired and was glad of the offer, but no sooner had the transfer been made than the soldier turned and ran off with the beer carton. The psychological problem is this: What was the soldier's reaction when he found that the carton contained only a dead pup? I had this story from Dr. Rice. I hope he won't mind my printing it.

★ ★ ★

In the practice of medicine, if you cannot diagnose headache, heartache or stomachache without the use of a ventriculogram, an electrocardiogram or six X-Ray plates, you are slipping

Never give a definite opinion as to how long a patient suffering from pulmonary tuberculosis will live, for the only certainty is that if you do, you will be wrong.—Samuel Gee.

The wisest psychology will never replace quinine and mercury in the cure of certain diseases, nor can it obviate the necessity of operative procedure for a perforated appendix.—C. F. Martin.

The treatment of high blood pressure is a regimen, not a drug.—Huchard.

In Pregnancy

TOCOPHEREX

VIOPHATE - D



SUGGESTED FOR TREATMENT OF THREATENED OR HABITUAL ABORTION DUE TO VITAMIN E DEFICIENCY

- Each capsule contains 50 milligrams of mixed tocopherols, equivalent in vitamin E activity to 30 milligrams of a-tocopherol.

Tocopherex contains vitamin E derived from vegetable oils by molecular distillation, in a form more concentrated, more stable and more economical than wheat germ oil.

For experimental use in prevention of habitual abortion (when due to Vitamin E Deficiency): 1 to 3 capsules daily for 8½ months. In threatened abortion: 5 capsules within 24 hours, possibly continued for 1 or 2 weeks and 1 to 3 capsules daily thereafter.

Tocopherex capsules are supplied in bottles of 25 and 100.



FOR INCREASED CALCIUM REQUIREMENTS

- Each capsule of Viophate-D contains 4.5 grains Dicalcium Phosphate, 3 grains Calcium Gluconate and 330 units of Vitamin D. The capsules are tasteless, and contain no sugar or flavouring. Where wafers are preferred, Viophate-D Tablets are available, pleasantly flavoured with wintergreen.

One tablet is equivalent to two capsules.

How supplied:

Capsules—Bottles of 100 and 1,000.

Tablets — Boxes of 51 and 250.

E·R·SQUIBB & SONS OF CANADA, Ltd.
MANUFACTURING CHEMISTS TO THE MEDICAL PROFESSION SINCE 1858

Editorial

The election is over and now we know who will direct the destinies of the local Health Plan. Here are the names of those nominated and elected to the Board of Trustees:

Dr. M. R. MacCharles	Dr. A. C. Abbott
Dr. H. D. Kitchen	Dr. S. Gordon Chown
Dr. Ross B. Mitchell	Dr. A. Hollenberg
Dr. J. Stewart McInnes	Dr. J. C. Hossack
Dr. Claude McRae	Dr. F. G. McGuinness
Dr. Hugh Cameron	Dr. P. H. McNulty
Dr. Brian D. Best	Dr. J. D. McQueen

Each year three of the above will retire and three others be elected to replace them. On looking over the list one fact becomes apparent; the general practitioners are not proportionately represented. This is a pity, and the fault should be remedied as quickly as circumstances will permit. No one will question either the integrity of the specialist trustees or their goodwill towards their non-specialist colleagues. But neither will any one question the fact that general practitioners are most affected by, can most appreciate, and are best fitted to attack, the problems of general practice.

It will be recalled that, in the early stages of the plan's development, separate meetings were held of the specialists and of the non-specialists because it was felt that only in this way could the difficulties and concerns of each group be properly dealt with. General practitioners preponderate in the profession and it is likely that there will be a similar preponderance in matters brought before the directors for their consideration and disposal. It follows, then, that practitioners should have, if not an exactly proportional representation, at least a 50% share in the scheme's direction.

It is unfortunate that we did not follow in the recent election the same plan that led to the formation of the "law amending" committee which did so much to improve the bill. Then, you may remember, there was a general meeting and a committee was elected which was proportionately representative of both groups.

★ ★ ★

It is our aim to give you useful reading matter in these pages. We try to avoid the very commonplace and we definitely eschew the very rare. The papers this month are all practical. Dr. Marjorie Bennett's contribution is most useful. To be sure, caudal anaesthesia is not an everyday procedure for every obstetrician but it seems to be such a boon to women in labor that public demand may insist upon its wider use. Dr. Bennett is the pioneer of this technique in Winnipeg and deserves the credit that goes to pioneers.

Dr. MacKinnon's paper was originally given at the January meeting of the Winnipeg Medical Society. So many requests for it were made then that we asked for the typescript. The presence of illustrations will make it even more valuable.

The paper by Dr. Margolese is also on an important topic and again the use of illustrations enhances its value. I am sure many of our readers will find it very helpful.

★ ★ ★

As everyone knows from personal experience, it is our transgressions that evoke comment. We can always tell that we have readers when some one calls up to complain about something that displeases him. The absence of comment, therefore, is tantamount to approval but occasionally some good hearted reader writes or says something nice which is much appreciated. But the supreme test of approval is the willingness to pay for the Review and recently two doctors in Vancouver sent their subscriptions. We could, indeed, get more subscribers were it not for the paper shortage.

★ ★ ★

Have You Paid Your 1944 Membership Fees?

The number of new members who this year have joined the Association is far greater than at any other time. They, like the majority of doctors in Manitoba are aware that existing conditions may create changes derogatory to the profession. Every practitioner who has followed the proceedings anent to Health Insurance cannot but realize that a new order affecting him personally, will, any day now, be incorporated in the statutes. The executive of the Manitoba Medical Association work long hours on your behalf, very often with personal loss to themselves in order to safeguard the interests of the profession as a whole and they need your wholehearted support at all times. Join the Association Now and make it possible for the executive, when acting as a delegation, to represent Manitoba 100%.

Membership in the Canadian Medical Association and the Manitoba Medical Association, which includes subscriptions to the C.M.A. Journal and the M.M.A. Review, is \$15.00.

★ ★ ★

April Medical Happenings

Luncheons

- 4th, Tuesday, 12:30, Misericordia Hospital.
- 6th, Thursday, 12:30, Winnipeg General Hospital.
- 11th, Tuesday, 12:30, Grace Hospital.
- 13th, Thursday, 12:30, St. Boniface Hospital.
- 18th, Tuesday, 12:30, St. Joseph's Hospital.
- 20th, Thursday, 12:30, Winnipeg General Hospital.
- 27th, Thursday, 12:30, St. Boniface Hospital.
- 28th, Friday, 12:30, Victoria Hospital.

Winnipeg Medical Society

- 21st, Friday, Regular Meeting, Medical College, 8:15.
- 28th, Friday, Medical History Section, Medical Arts Club Rooms, 7:30.

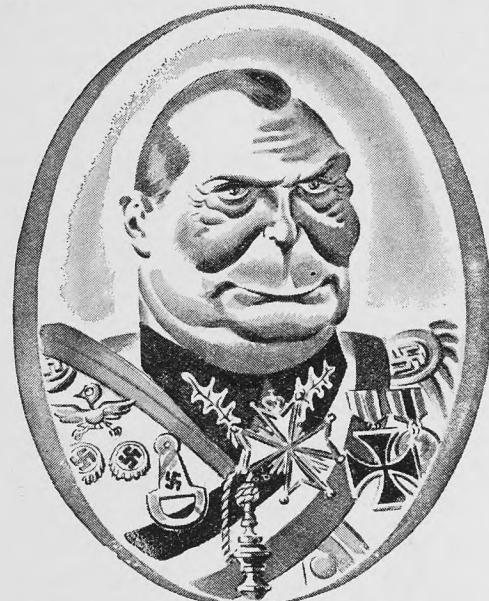
Tumor Clinic

- Winnipeg General Hospital, Every Wednesday, 9 a.m.
- St. Boniface Hospital, Every Tuesday, 10 a.m.

Ward Rounds

- Every Thursday, 11 a.m., Children's Hospital.

C A S E H I S T O R Y



Clinical Observation No. 3

H. G.

Age 51

Occupation

Corporation director

Patient referred by Dr. H. Goebbel, February 1, 1944, complaining of loss of weight and insomnia because of irritation by *mosquitos Britannicus*. Careful examination elicited the following:

Patient went to the front in 1914 and has stayed mostly at the front ever since. Association with zeppelins led to development of physical characteristics conforming to his environment. In 1918 patient suffered accidental bilateral orchidectomy which was obviously a severe psychic trauma.

His marriage may have been influenced by overcompensation for his limited sexual ability, for he was shortly confined to a hospital for the insane. Occupational therapy (costume jewelry and medal designing) was beneficial and patient discharged after two years.

Sympathetic association with a political radical at the time (A. H.) led to a shot in the putsch. (Munich, 1923).

In 1930 female characteristics became more pronounced. High pitched voice, girdle obesity and gross fat distribution on hips, buttocks and breasts. Perverted desires manifested in bizarre costumes and decorations.

SUMMARY OF POSITIVE FINDINGS:—

Fröhlich syndrome (dystrophia adiposogenitalis). Paroxysma and penicilliform penis.

TREATMENT:

Confinement to rest home (concentrated).

PROGNOSIS:

Early death (through rope or lead poisoning) appears inevitable.

Jetol

A NEW TYPE OF SULFATHIAZOLE PASTE

An innovation in sulfonamide therapy for topical use; combining sulfathiazole with allantoin and proflavine in a water soluble base.

FORMULA: Sulfathiazole 5% Allantoin 0.5% Proflavine 0.1%
in a water soluble base.

INDICATIONS: As a general antiseptic for office use. For skin infections, burns, traumatic wounds and other skin lesions, therapeutically and prophylactically.

PACKAGED: In collapsible tubes— $\frac{3}{4}$ oz. In jars—16 oz.

FRANK W. HORNER LIMITED
MONTREAL CANADA

Association Page

A Message to Medical Men in the Armed Forces

This message is to take the form of a short heart to heart chat upon the relationship of the recently graduated medical men in the Services to his older and established colleague on the home front.

In the first place, there should be no rivalry or antagonism between the two groups. The Service men are doing a splendid job in attending the men at home and in the combat zone. In this, we hope the last great war, the mortality of casualties is steadily decreasing. To the Medical Officer removed from the combat zone with too much idle time upon his hands it may seem that he is a forgotten man. A physiological illustration might be used in this connection. It is believed that the human organs, such as lungs, heart, kidney and liver provide up to nine times the amount of parenchymatous tissue essential for life. If this be so, a considerable portion of the lungs, heart, kidney and liver are in use part time. These organs can function efficiently while a part (the spare room) is being papered. Global warfare involves such quantities of men and material that it is not to be wondered at that all these previously mentioned cannot get to work at once. During the time of inaction our so called Medical Officer is as the unused cardiac cells in the heart, ready for service but not called into action. During this time the Medical Officer recalls the lines of Ulysses "To rust unburdened not to shine in use." However, someday, though it may be prolonged, active service conditions will come.

With idle time on one's hands, doubts creep in that perhaps the civilian doctor is getting his fences in order to guard against post war competition.

Let us for a moment look at the villain not subject to army discipline. In Manitoba his average age is around 54. He is doing roughly twice the amount of work that he did at 44. Everywhere, without criticizing anyone, he finds working conditions difficult to nigh impossible. He sees double the number of patients during working hours. Hospital staffs have been depleted; he finds increasing need of checking with twice the number under his care in hospital. The many pinpricks of wartime, rationing, controls, the services of his car, when skilled mechanics are hard to get, all add up to more complications in living. Many of the "around 54 group" returned from World War No. 1 firmly believing that "the war to end wars" was over. **Now they could** settle down to a long period to enjoy the arts of peace. Past middle life they find themselves working harder, under unsatisfactory conditions and with less income than at age 40 years. Can he be blamed if, dead tired with heavy working days ahead, he casts an envious eye upon his junior brother in the Services with less work and an opportunity to travel the seven seas at the Government's expense? The man in the Services replies he would gladly renounce his chances to roam, settle down and attempt to cure the ills of the many that now threaten to overwhelm his civilian colleague.

We can't conclude any discussion these days without mentioning Health Insurance. There is a mistaken but prevailing impression in the Services that the younger men have not been considered sufficiently in the plans of organized medicine. Due to military regulations, it is recognized that civilian medicine will take the initiative in getting the viewpoint of junior service men. In Manitoba letters are being forwarded to Army and Air Force Commands asking medical men in the Services to make known their views upon Health Insurance.

It has been pointed out that information upon Health Insurance, both verbal and written, has been on the scanty side to the military. It would seem that this point is well taken and in future will be corrected.

It would seem that the medical man at home, by and large, is working too hard for his years, that he would welcome more leisure and fewer patients, that the men in the services can't return too quickly, that Health Insurance with its unknown factors is disturbing, to say the least.

The Service man probably suffers more from lack of work than overwork. He is doing necessary work but such work is no help in the curative life of medicine. He will earn his living during the post war period. The practice of obstetrics, gynaecology, and pediatrics bulk largely in curative medicine. He is nagged by the doubt that the men in civilian life are either not cognizant of his problem or indifferent in the proposed Health Insurance Scheme.

To equip junior medical men in the Services, especially those who have never practiced civilian medicine, or under two years, the Faculty of Medicine has under consideration Refresher Courses of considerable magnitude. As each medical school will be obliged to look after its own graduates (all the Allied Nations have a similar problem) the proposed plans for post graduate Refresher Courses will need considerable study before announcement.

D.C.A.

Brandon and District Medical Association Meeting, March 15th

Hospital for Mental Diseases, Division of Psychiatry, were dinner hosts to some 45 doctors, of whom two-thirds were from the Services. Colonel Lewis of Camp Shilo moved a hearty vote of thanks for the excellent hospitality provided by the Brandon Mental Hospital.

Dr. C. M. Thomas presided.

Dr. Stuart Schultz gave a paper on Child Guidance. This clinic was organized in 1931 and reorganized in 1940. During this period 2,004 have been examined, including 1,598 psychometric examinations. Child guidance should start with pre-natal examinations. The speaker stressed the first eighteen months of a child's life as being very important. Every child entering Brandon School has an I.Q. test. Dr. Schultz gave examples of children of high and low I.Q.'s. He mentioned children of 110 I.Q. loafing through public school who get a bump when they enter a collegiate institute. It has been suggested that an I.Q. of 70 should spend two years in each grade, attaining a maximum of grade 4.

Speech Defects—The speaker mentioned the influence of rhythm, poems, etc., in the overcoming of speech defects. Dr. Schultz mentioned behaviour problems and various instances of maladjustment. He mentioned in examining a child from rural Manitoba the child did not know what a radio was. Child Guidance includes supervision of adoption of children.

In the discussion which followed one of the speakers asked, in determining a child's I.Q., how to differentiate between a reticent child and a stupid child. The questioner mentioned a bright child who was asked in an I.Q. test the difference between a fly and a butterfly. The child did not give any reply after repeated questioning, so the question was passed. Later on someone asked this child why he did not answer the question. The reply was "I think that's a silly question."

Your President gave a resume of many angles of Health Insurance to date. A full and somewhat lengthy discussion followed. One point was brought out that the service man wishes to have more say in the fashioning of Health Insurance and also wants more information from organized medicine of the progress of Health Insurance from month to month.

D.C.A.

Power alone is not enough



The shortcomings of sheer power are familiar to every surgeon. For, in preoperative disinfection, an antiseptic agent which offers power *alone* is useless. An efficient antiseptic must combine high disinfecting power with relative freedom from irritating effects and prolonged antiseptic action. Tincture Metaphen's advantages in this respect have been clearly established in an impartial, comparative study of 15 commonly used antiseptics.* On the oral mucosa, Tincture Metaphen 1:200

reduced bacterial count 95-100% within five minutes; caused only slight irritation in a few cases, none in the others; and had, in substantial excess over any other antiseptic tested, a duration of action of two hours. This antiseptic, in a *tinted* or *untinted* alcohol-acetone-aqueous solution, is conveniently available through hospital and ethical prescription pharmacies everywhere in 1-ounce, 16-fluidounce and 1-gallon bottles.

ABBOTT LABORATORIES LIMITED • MONTREAL

Abbott
Tincture Metaphen 1:200

*Meyer, E., and Arnold, L. (1938),
Amer. J. Digest. Dis., 5:418.

Personal Notes and Social News

Dr. and Mrs. E. H. Alexander have left for the East to be with their son Donald, R.C.A.M.C., Camp Borden, when he celebrates his 19th birthday. Toronto, Montreal, Ottawa and Chicago are on their itinerary.



Dr. and Mrs. H. D. Kitchen and their son Danny are vacationing at the Empress hotel, Victoria, B.C. They expect to return to Winnipeg April 3rd.



Surgeon-Lieutenant Robert MacNeil, R.C.N.V.R., has been transferred to a base in Newfoundland.



Dr. and Mrs. W. T. Dingle are happy to announce the birth of a son on March 10th, 1944, at the Winnipeg General hospital.



Dr. and Mrs. J. D. McQueen are spending a vacation at Oak Bay Beach, B.C.



Capt. Rene Letienne, medical officer at A15 Infantry Training Centre, Shilo Camp, has been transferred to No. 23 General Hospital, R.C.A.M.C., Stratford, Ontario.



Dr. and Mrs. Victor Moorehouse's daughter Margaret Sidney was married March 14th at All Saint's church, to Lieut. Alexander Primrose Grahame Joy, R.C.N.V.R., son of Mr. and Mrs. E. Grahame Joy of Toronto.



Dr. and Mrs. Digby Wheeler have left for the West coast where they will vacation at Oak Bay Beach, B.C.



Dr. and Mrs. R. W. Whetter of Steinbach, Man., announce the birth of a son (Alan Reginald) on February 25th, 1944 at the Winnipeg General hospital.



Major F. R. Tucker, R.C.A.M.C., has been transferred from the Army Reception Centre, to No. 22 General Hospital, Stratford, Ont.



Dr. and Mrs. W. A. Gardner are spending a month's vacation at Oak Bay Beach, B.C.



Dr. Michael John Ranosky of Winnipeg has been appointed lieutenant in the R.C.A.M.C. of the active army.



Dr. and Mrs. J. S. McInnes recently left for the West coast where they will vacation at Oak Bay Beach.

Dr. and Mrs. Fred L. Jamieson announce the engagement of their daughter, Eleanor Lorraine, to Donald David Sturdy, youngest son of Dr. and Mrs. Walter Sturdy, Vancouver. The wedding to take place in Montreal, April 6th.



Dr. and Mrs. J. A. Bourgouin are happy to announce the birth of a daughter (Madeleine Aimee) on March 15th, 1944.



Dr. J. T. Cruise has returned from the West Coast where he was vacationing at Victoria and Vancouver.



Drs. C. W. Burns and Gordon Chown have returned from the West coast. While there, they were guests at the Empress hotel, Victoria.



The Executive and Members of this Association desire to express their deepest sympathy to Lieut.-Col. Ross Cooper, officer commanding 3rd casualty Clearing Station, Canadian Army overseas, and Mrs. Cooper on the loss of their infant son, John Ross Cooper, who died on March 7th at the family residence in Winnipeg.



Dr. and Mrs. Eyjolfur Johnson of Selkirk, Man., left on March 18th for a two week's vacation at Banff, Alberta.



Dr. S. S. Green will attend the University of Illinois clinic which is being held in Chicago.



Captain David Swartz, surgery specialist on the staff of the Army Reception Centre at Fort Osborne Barracks, has been promoted to the rank of Major.



Dr. and Mrs. O. D. MacCallum, of Huntington, West Virginia, have announced the birth of a son on March 17th, 1944.



You greet a friend
on an Incoming train,
You bid farewell
on an Outgoing train,
But you say goodbye
with a sad forlorn
to your Outgoing cash
on an Income tax form.



I wish I had a paper doll—ar
I could call my ow—n.
(to be sung in "D" Flat (broke)
after paying your income tax).



202

Department of Health and Public Welfare

Comparisons Communicable Diseases—Manitoba

(Whites Only)

DISEASES	1944		1943		TOTALS	
	Jan. 30 to Feb. 26	Jan. 1 to Jan. 29	Jan. 31 to Feb. 27	Jan. 1 to Jan. 20	Jan. 1 to Feb. 26, '44	Jan. 1 to Feb. 27, '43
Anterior Poliomyelitis			2	4		6
Chickenpox	244	320	165	268	564	433
Diphtheria	11	9	35	20	20	55
Diphtheria Carriers	1	4	3	2	5	5
Dysentery—Amoebic						
Dysentery—Bacillary			1	1		2
Erysipelas	8	7	5	6	15	11
Encephalitis	1			1	1	1
Influenza	9	29	113	38	38	151
Measles	255	116	161	98	371	259
Measles—German	49	6	10		55	10
Meningococcal Meningitis	2	3	3	3	5	6
Mumps	324	187	603	437	511	1040
Ophthalmia Neonatorum						
Pneumonia—Lobar	10	16	18	18	26	36
Puerperal Fever			1			1
Scarlet Fever	264	267	108	45	531	153
Septic Sore Throat	2	2	9		4	9
Smallpox						
Tetanus						
Trachoma						
Tuberculosis	49	21	46	19	70	65
Typhoid Fever			2	3		5
Typhoid Paratyphoid						
Typhoid Carriers						
Undulant Fever	1		2			2
Whooping Cough	27	21	134	167	48	301
Gonorrhoea	159	139	158	174	298	332
Syphilis	42	48	39	45	90	84
Meningococcal Meningitis Carriers				4	2	6

DISEASE	*738,000 Manitoba Jan. 30-Feb. 26, '44	*3,825,000 Ontario Jan. 30-Feb. 26, '44	*906,000 Saskatchewan Jan. 30-Feb. 26, '44	*2,972,300 Minnesota Jan. 30-Feb. 26, '44	*611,935 North Dakota Jan. 30-Feb. 26, '44
Actinomycosis		1			
Anterior Poliomyelitis			1		
Meningococcal Meningitis	2	15	1	22	6
Chickenpox	244	1516	198		19
Diphtheria	11	14	3	19	2
Dysentery—Amoebic				5	
Bacillary				2	2
Erysipelas	8	2		2	
Influenza	9	186	9	10	50
Leth. Enceph.	1	1			1
Measles	255	2420	247	4671	989
German Measles	49	133	62		
Mumps	324	908	53		44
Ophthal. Neonat.					
Puerperal Fever					
Scarlet Fever	264	878	84	793	163
Septic Sore Throat	2	5	41		
Smallpox					
Trachoma			1		
Tularemia				1	
Tuberculosis	51	194	11	54	36
Typhoid Fever		2			1
Typh. Para-Typhoid			1		
Undulant Fever	1	5		9	1
Whooping Cough	27	478	35	130	18
Diphtheria Carriers	1				
Gonorrhoea	159	649			16
Syphilis	42	663			35

*Approximate Populations.

DEATHS FROM COMMUNICABLE DISEASES

January, 1944

URBAN — Cancer 40, Pneumonia (other forms) 11, Tuberculosis 9, Pneumonia Lobar 5, Influenza 4, Syphilis 2, Whooping Cough 2, Typhoid Fever 1, Cerebrospinal meningitis 1. Other deaths under 1 year 16. Other deaths over 1 year 171. Stillbirths 16. Total 278.

RURAL — Cancer 19, Pneumonia (other forms) 8, Tuberculosis 7, Influenza 4, Pneumonia Lobar 3, Syphilis 2. Measles 1, Whooping Cough 1, Pyemia 1. Other deaths under 1 year 14. Other deaths over 1 year 122. Stillbirths 9. Total 191.

INDIANS — Influenza 6, Tuberculosis 5, Pneumonia (other forms) 4, Pneumonia Lobar 1*, Whooping Cough 1. Other deaths under 1 year 7. Other deaths over 1 year 4*. Stillbirths 2. Total 30.

* White persons living on Indian Reserves.

Diphtheria, with 11 cases reported is still our bugbear.

Erysipelas shows a higher incidence than usual but not much can be done as regards prevention excepting education of the people regarding proper treatment of very minor injuries.

Measles are apparently epidemic in Ontario, Minnesota and North Dakota. We may be on the verge of an increase in morbidity.

Scarlet Fever is prevalent throughout Manitoba.

Septic Sore Throat might be pretty well wiped out if all milk was pasteurized before use. We have just had a small epidemic, with one death, which appeared to be due to the use of raw milk.

CORRECTIVE pH

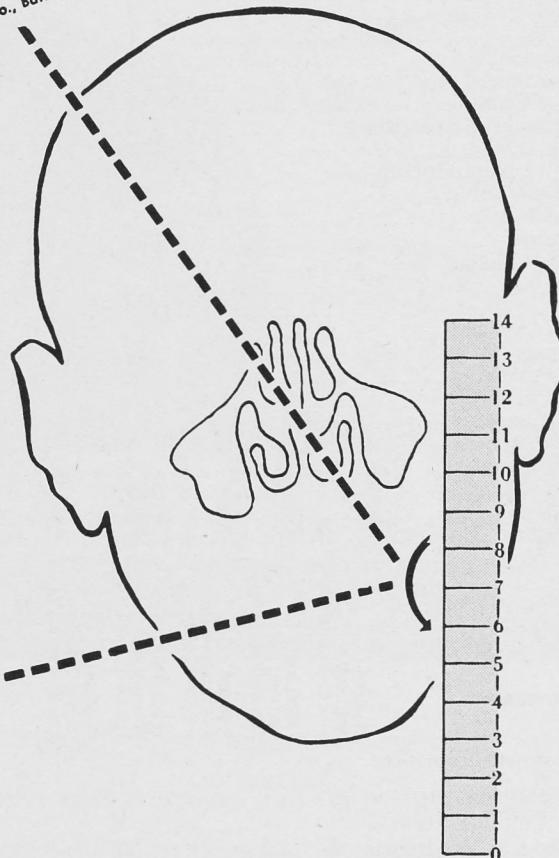
Isotonic solutions, buffered at pH 6.2 to readjust pathological alkaline secretion to normal acid range . . . maintains ciliary beat, restores bacteriostatic action of the secretions, facilitates normal healing.¹

1. Fabricant, N. D., Nasal Medication, Williams & Wilkins Co., Balt., Md.—1942

PRIVINE

TRADE MARK REG'D

FOR PROLONGED RELIEF
OF NASAL CONGESTION



Privine is now issued as a 1:2000 solution in bottles of 1 oz. and 8 oz. at no increase in cost to the patient. Literature and samples on request.



C I B A *Company Ltd.*

MONTREAL, CANADA

TOMORROW'S MEDICINE *from* TODAY'S RESEARCH

Food Poisoning Affecting Eighty-Five Patients and 250 Personnel of A General Hospital

The following is a summary of an interesting report which appeared in the "Hospitals", March, 1944. Food poisoning is rarely reported to a Health Department and it is likely that outbreaks are much more frequent than believed. This article is of interest from every viewpoint, shows particularly the care which is necessary in handling food which is not immediately consumed.

An outbreak of food poisoning occurred in a general hospital in Texas, on July 6, 1943. The hospital, used to a large extent for training medical and nursing students, was established over 50 years ago, and while the facilities for medical care have been increased markedly from time to time, those for cooking and storage of foods for patients and personnel have been increased but little.

The patients in the institution numbered 390 and the personnel 610 (320 white and 290 colored). There appears to have been at least 85 cases of gastro-intestinal irritation among the patients and 250 cases among the personnel.

The study comprised:

1. Obtainment of clinical histories.
2. Collection of data regarding the distribution of cases.
3. Determination of the kinds of foods and beverages consumed.
4. Surveys of conditions under which the foods and beverages were prepared, stored, and served.
5. Submission of samples of foods and beverages regarded as possibly implicated to the laboratories.

Especial attention was given to factors which might have operated in contamination of the foods by human hands, by flies, roaches, mice, and other vermin, and to temperature and moisture maintained in the refrigerators in which the foods were stored.

In general, the clinical manifestations of the cases were very similar. The predominating symptoms were nausea, vomiting, abdominal cramps, and purging, but no fever. The duration of the attacks ranged from two to 72 hours, but in most cases it was from four to 12 hours. Blood was not apparent in either vomitus or stools. The stools usually were liquid and copious and averaged five to 10 in number during the attack. The attacks were distressing and in varying degrees exhausting, but none were reported gravely serious.

Table II

Interval between the eating of implicated meal by 97 persons, and onset of symptoms.

Hours:	Number of cases
2-3	6
3-4	12
4-5	20
5-6	18
6-7	16
7-8	10
8-9	1
9-10	4
10-11	1
13-14	1
18-19	3
20-21	1
21-22	1
36-48	2
48-72	1
Total	97

The outbreak was confined to patients and personnel who had their meals prepared in and distributed from one common kitchen. Many scores of persons taking their meals outside the hospital, but who

before, during, and after the outbreak were in close and frequent contact with those affected, remained entirely exempt.

The explosive character, the clinical manifestations, and the distribution of the cases taken together suggested strongly at the outset of the study that the outbreak was caused by food poisoning.

The next step was to determine in what meal or meals the causative agent was spread. Due to temporary absence from the hospital, night duty, or some other reason, a considerable number of the personnel including 23 among the white personnel who returned the questionnaires, did not partake of the noonday dinner served in the hospital on July 6 but had eaten several meals at the hospital immediately preceding that dinner. None of these persons was attacked.

Not a case was reported or found in any person who did not partake of the dinner served in the hospital on July 6. Thus, that dinner was definitely implicated and all preceding meals served in the hospital were definitely eliminated.

The menu of the dinner of July 6 for patients and personnel on regular diet consisted of chicken salad, boiled string beans, scalloped potatoes, strawberry ice cream, bread, and milk. Those on regular diet included a large majority of the patients and all or nearly all of the personnel.

The milk was obtained from a widely marketed pasteurized supply and was delivered in well-capped bottles (half pints and quarts) to the hospital.

The ice cream was obtained from a widely marketed pasteurized supply in the city and was delivered in individual service paper wrappers to the hospital.

No outbreak of gastro-intestinal irritation coincident with that in the hospital was reported in the city.

The scalloped potatoes and the string beans were freshly cooked and were served while still hot.

The chicken salad had the following interesting and somewhat complex history of origin, preparation, and distribution:

The chickens, small two-year-old hens, were purchased from a chicken grower in a village within a few miles of the hospital. They were killed and picked, and delivered to the hospital on the evening of July 1. Upon delivery, they were piled into a refrigerator as they were with heads and feet on and undrained. On the morning of July 2, they were packed in ice, each layer of hens between two layers of ice, and restored in the refrigerator.

On the morning of July 3, the hens were taken out of the refrigerator, and after being drawn and washed and heads and feet removed were returned to the refrigerator. On the afternoon of July 3, one-half of the batch of hens were roasted, and after cooling for an hour or two at kitchen temperature (which was probably over 95° F.) were put in the refrigerator.

On the morning of July 4, the roasted chickens were carved, heated up in gravy, and while still warm distributed to the wards and cafeterias. No gastro-intestinal irritation or other ill consequence was noted to have resulted from the consumption of the dinner served on July 4.

The other half of the batch of hens were cooked in large pots on the afternoon of July 5. The cooking

consisted of thorough boiling in salted water for two to three hours, thereby making the meat tender and readily removable from the bones. The boiled hens while still hot were piled up in the refrigerator. Such a mass of hot meat must have caused some rise in the temperature of the refrigerator and the deeper or central parts of the mass of meat must have remained warm for some hours—probably 12 hours or more—after the meat was put in the refrigerator.

The air temperature in this refrigerator, under usual conditions of operation, ranges from 42° F. to 55° F. with a relative humidity averaging 85 per cent. However, the temperature and humidity of the kitchen air were found so high that the frequent entrance of this air into the refrigerator results in a large precipitation of moisture on the cooling coils, floor, walls and exposed surfaces of cooled foods in the refrigerator.

Beginning about 6.30 a.m., on July 6, the boiled hens were removed from the refrigerator into the kitchen where the meat was stripped from the bones, mixed with hard boiled eggs and celery (from the local market), and the mixture was run through a chopper and grinder. A mayonnaise dressing consisting of oil, whole raw eggs, vinegar, salt, and paprika beaten together in a large electric mixer was then worked thoroughly by hand into the chicken mixture. All of the mayonnaise so used was said to have been freshly made that morning.

The dressing was added and mixed into the chicken in two large trays. The preparation of each tray load in the kitchen took two or three hours. The first tray of salad was put into the refrigerator while the second tray was being completed.

The second tray load was distributed immediately upon completion without being put into the refrigerator. The ventilation of the kitchen is inadequate and its air temperature in periods of cooking is at this time of year uncomfortably high.

Among the personnel, everyone who was attacked in the outbreak gave a history of having eaten some of the chicken salad; no one who had not eaten the salad became ill.

Among the patients who were attacked all except two—and these had somewhat atypical cases—were among those who ate chicken salad.

The epidemiological evidence alone definitely established (a) the noonday dinner as the meal in which the causative agent of the outbreak was distributed and (b) the chicken salad as the sole or almost sole medium of conveyance. The short interval between the eating of this meal and the beginning of the outbreak was evidence that the outbreak was caused by a preformed toxin such as that produced by *staphylococcus aureus* as the causative agent.

How the chicken became contaminated was the next question to be answered. It may have been by human hands, by flies, roaches, mice, or other vermin, or through the air—the greatest probability being human hands.

The care and cleanliness of the hands and clothing of most of the food handlers in the kitchen were far from scrupulous. The sanitary and hygienic conditions in the kitchen and refrigerators and in the immediate outside vicinity were not altogether satisfactory. Flies were numerous in the kitchen and from time to time some invaded the refrigerators.

Due to shortage of receptacles some of the garbage, broken dishes, and other refuse were piled up on the floor of a small room separated from the kitchen only by a door which was frequently opened. Flies were breeding abundantly in this refuse dump and the dump almost certainly was visited frequently by various insects besides flies and by mice, rats, and other vermin.

The chief cook and his two women assistants were the main handlers of the chicken which went into the salad. They handled the boiled chickens after the cooking on July 5. They stripped the meat from the bones and by hand mixed and thoroughly worked the mayonnaise dressing into the ground chicken on the morning of July 6. *Staphylococci* of the food poisoning variety would not withstand the heating which must have occurred in the course of the two or three hours of boiling on July 5. Therefore the contamination of the chicken must have taken place after the chicken was cooked on July 5.

Multiplication of an enterotoxin production by such organisms in such a medium could have gone on rapidly and abundantly for hours in the deeper parts of the mass of hot to warm meat after it was placed in the refrigerator on July 5 and during the processing of the meat into salad on July 6.

The chief cook was a possible source of the infection which was introduced into the chicken. He had had an attack of diarrhea which began June 30 and continued through July 3. He had remained home during his illness and had returned to duty in the hospital kitchen in the early morning of July 4.

The service demand upon the hospital kitchen is exceedingly heavy. In this one kitchen about 3,000 meals a day are prepared. The space is inadequate, much of the equipment is outworn, and the personnel problem due to turn-over and at times shortage of force is serious.

The findings in three separate laboratories:

Presence of *staphylococcus aureus*, appearing from the study so far made to be of the enterotoxin producing type* in predominant number and of the colon bacillus (*escherichia coli*) in large number in the chicken salad.

A highly significant finding in each of the three laboratories was the presence in the specimens of the chicken salad of *staphylococcus aureus* in large numbers and the absence of other kinds of organisms found in food poisoning. This finding is in entire accord with the epidemiological evidence.

Of especial significance was the finding of *staphylococcus aureus* in large numbers in the specimen of chicken bones sent to one of the laboratories. These bones had been stripped of chicken which went into the salad. Immediately after the meat had been stripped from them, the bones had been removed from the kitchen and stored in the refrigerator. The abundance of the *staphylococci* in the bones definitely implicates the chicken and eliminates the mayonnaise dressing, the celery, the eggs, and all of the other ingredients of the chicken salad except the meat as the medium of conveyance of the causative agent of the outbreak.

The finding of numerous colon bacilli (*escherichia coli*) in each of the samples of chicken salad examined indicates fecal contamination. Either the contamination was heavy or a multiplication of the organisms occurred after the contamination. The contaminating matter carrying the *B. coli* may have carried at the same time or times the *staphylococci* involved in the outbreak.

Conclusions

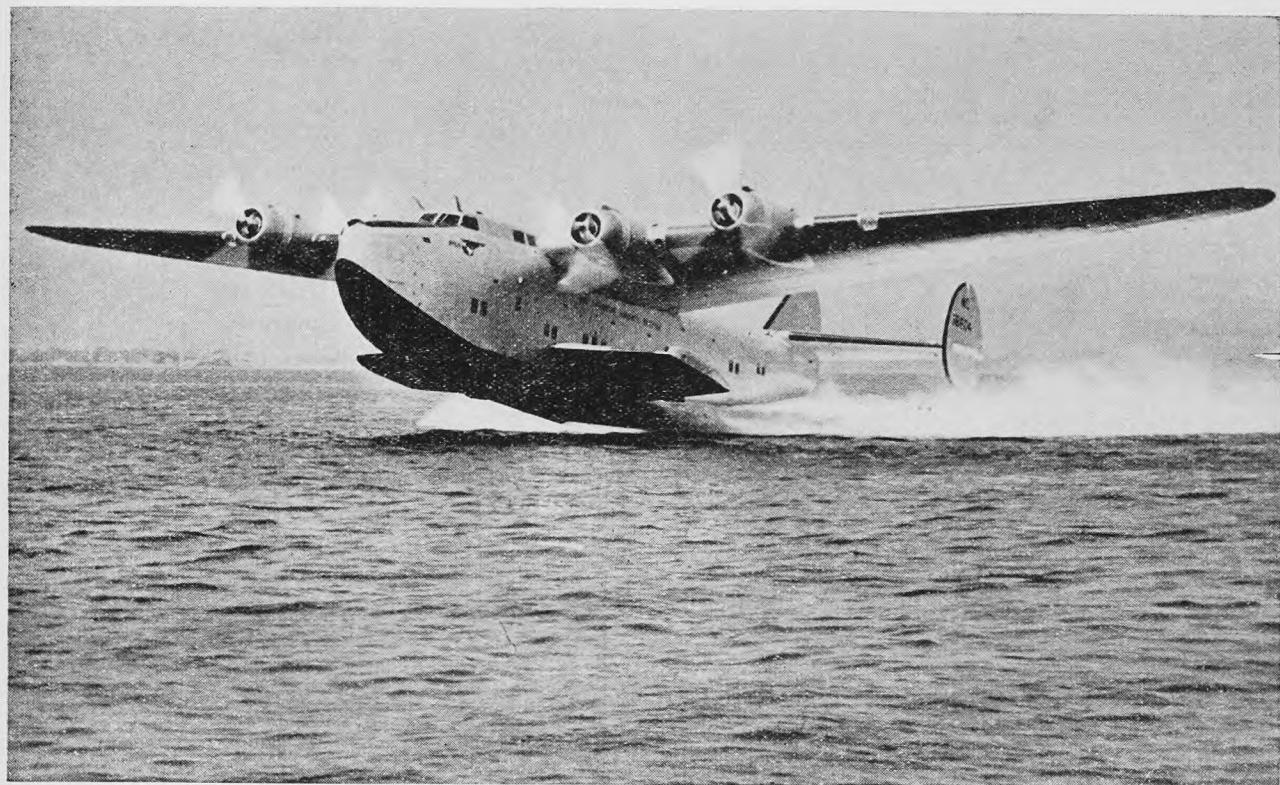
The medium of conveyance of the agent causing the outbreak was chicken served at the noon dinner on July 6, 1943.

Chicken salad was the sole, or certainly the almost sole, medium of conveyance.

The causative agent was a bacterial toxin produced by *staphylococcus aureus* of the specifically enterotoxin forming type.

(Continued on Page 124)

DAYS SAVED



The transatlantic clipper makes the hop from New York to Lisbon in approximately 20-24 hours, saving days of ocean travel.

In the treatment of boils and styes, pure tin and tin oxide (Stannoxy) likewise save many days of unnecessary suffering. In a recent clinical test the healing time of boils treated with Stannoxy averaged 8 days, less than one-third that of previous untreated boils in the same patients.

Animal tests prove the efficiency of Stannoxyll against boils. Experimental boils

produced in two rabbits by intradermal inoculation of *Staphylococcus albus* obtained from a human case healed completely in 7 days under Stannoxy treatment. In the untreated control the boil was still active after the same period.

The average dose is 2 tablets with water four times daily, providing a total of 0.8 Gm. chemically pure tin and 0.076 Gm. tin oxide with excipients. Entirely harmless even when used continuously over long periods.

Liberal samples on request

STANNOXYL

ORAL TREATMENT OF BOILS AND STYES

**THE ANGLO-FRENCH DRUG COMPANY, 209 ST. CATHERINE STREET EAST
MONTREAL QUEBEC**

The introduction of staphylococcus aureus on or into the chicken may have been by human hands, dropping perspiration, floating droplets from the nose or throat of some one or more of the food handlers in the kitchen, by flies, roaches, mice, or other vermin, or through air currents. Most probably it was introduced by human hands.

The chicken became contaminated with the staphylococci during the process of handling and exposure of the meat in the kitchen or during storage in the refrigerator subsequent to cooking on July 5. The

much greater probability is that contamination occurred during the handling in the kitchen.

* Coagulase positive. It liquefies gelatin when tested with the technique of R.V. Stone (Proc. Soc. Exper. Biol. and Med., 33:185-87, 1935).

There was a tremendous multiplication of the infecting organisms in the meat during storage in the refrigerator from the afternoon of July 5 to the morning of July 6 and during the several hours that the meat was being made up into salad in the high temperature of the kitchen on the morning of July 6.



DOCTORS' and NURSES' DIRECTORY

213 Balmoral Street, Winnipeg, Man.

24-Hour Service

Phones:	Victorian Order of
Doctors' — 72 152	Nurses—night calls,
Nurses' — 72 151	Sundays and
Registered Nurses.	holidays.
Practical Nurses.	Phone 72 008

Physiotherapists and Masseuses
—P. BROWNELL, Reg. N., Registrar.

The Winnipeg Drug Co., Limited

(H. D. CAMPBELL)

PRESCRIPTION SPECIALISTS

Agents for
NICHOLSON'S VACCINES

407 PORTAGE AVE. (Cor. Kennedy)

Phone **24 866**

PHYSIOTHERAPY

by J. C. Swann

Member of

**The Canadian Physiotherapy
Association**

(Incorporated by Dominion Charter)

Graduate of: Massage, Swedish Movements, Muscle Re-education and Medical Gymnist, 2 years training in Christie Street Hospital, Toronto, Masseur at Deer Lodge Hospital, Pensions and Health, Winnipeg, for the past 15 years.

(Under Medical Supervision
or Direction.)



Phone **80 760** **438 Somerset Bldg.** Res. Phone
after 1 p.m. **Winnipeg, Man.** **54 195**

« COLLECTIONS »

The MEDICAL BUSINESS BUREAU can render you an experienced collection service—with 19 years' service to the Medical and Dental professions.

We have every facility for an efficient collection service—

- Investigations on character and financial worth;
- Personal contact with doctors;
- Follow-ups;
- Complete legal facilities;
- Bonded agents throughout Canada;
- Regular monthly returns.

Doctor, you require a tactful and dignified service that will not jeopardize your position with the patient. Write or telephone—

MEDICAL BUSINESS BUREAU

211 Power Bldg.

Telephone 23 534

WINNIPEG

**Most palatable and satisfying
of all Carbonated Beverages**

DREWRYS DRY GINGER ALE

3 Sizes; 6-oz — 12-oz. — 28-oz.

POULENC FRERES

204 YOUVILLE SQUARE—MONTREAL

The home of:

**CORYPHEDRINE
STOVAGINAL
DAGENAN
SONERYL**

Detailed literature upon request.